1855MNRAS..16...29B

material alteration in the adjustments. It carries an excellent telescope of 5 feet focal length and 4¼ inches aperture, by Mills of Pentonville; and with a power of 72 I can find, without fail, anything I look for by day or night. By means of a pulley-wheel beneath the hour-circle, connected by a catgut band with a smaller pulley acted upon by a tangent screw, I get an excellent slow motion in R.A., to which I hope shortly to attach a jack to act as a clock.

"The wood-work is of clean-grained Honduras mahogany. The cost of the whole to me was about 4*l.* The brass work and division of the circles, which I executed myself, I set down at 2*l.* additional. This is altogether a very small cost for the facilities which the apparatus affords to the astronomer whose means are limited; and there are few places now in which a suitable lathe, and a sufficiently skilful workman, cannot be found for the execution of all that is needed.

"I have been as concise as possible in the description of this affair; but it will give me much pleasure to furnish more particular details to any gentleman who may be desirous of them. It may be added that the framing of the shears being secured by brass thumb-screws, the whole machine may be taken to pieces and removed in five minutes, with the exception of the pier, which, with a little contrivance, might be made to answer the additional purpose of supporting a sun-dial.

"*St. Aubin's, Jersey, December* 18, 1855."

Occultations of Stars by the Moon observed at Highbury.

By T. W. Burr, Esq.

Latitude 51° 33′ 45″·1 N. Longitude 23″·8 W.

1855.			Sidereal Time. h m s	
March 5th γ *Virginis*	Preceding Star	Immersion	9 13 46·4	Bright Limb
,,	Following Star	,,	9 14 6·4	
,,	,,	Emersion	9 29 47·4	Dark Limb
April 23d λ *Cancri*	. . . .	Immersion	12 57 59·8	Dark Limb
Oct. 24th *o Piscium*	. . . .	,,	23 56 54·6	Dark Limb. Moon very nearly full

"The two latter occultations are good observations as to time. In the case of γ *Virginis* the clock-error was not so accurately known; but the observations are recorded for the sake of drawing attention to the length of time during which the second star remained attached to the edge of the moon's disc. The preceding star disappeared instantaneously; but the following one, which arrived at the moon's edge in 4ˢ or 5ˢ, remained attached to it until 20ˢ had elapsed from the immersion of the first star, when the

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1855MNRAS..16...30M

second also disappeared. There was no projection of the star on the moon's surface; but it appeared to assume a planetary disc, part of which was hidden, and the rest remained as a slight excrescence on the moon's edge. Probably, had the immersion taken place at the dark limb, the whole of the spurious disc would have been seen projected on the surface, as the impression produced on my mind was that such was now the case, only the bright surfaces of the moon and star could not be distinguished from one another.

"In consequence of the moon's position being low in the east, the line joining the stars formed nearly a right angle with a tangent to the moon's disc; so that the longest possible time elapsed between the immersions: and the fact that the stars passed behind a very small portion of the moon's body, so that they might at first do little more than graze the edge, throws some light on the unusual period of time during which the attachment continued.

"The telescope was my equatoreal by Ross, 4 feet focal length, $3\frac{3}{8}$ inches aperture. Power, 173."

On the Dimensions of the Rings of Saturn.

By the Rev. R. Main, M.A.

The author commences by stating, that in the winter of 1852–3 he executed a series of measures of the dimensions of the rings of *Saturn*, with a double-image micrometer, similar in principle, but not identically the same, as that used in the measures which he executed in 1849 for determining the form of the planet, an account of which is published in vol. xviii. of the *Memoirs* of the Society. In the beginning of 1854 he repeated his measures of the dimensions of the rings. Both sets of measures will be found printed and reduced in the volumes of the *Greenwich Observations* for 1852 and 1854, which also contain an account of the construction of the micrometer, the method of using it, the degree of accuracy and delicacy of measurement attainable by it, and other circumstances which a critic would desire to become acquainted with.

The author, in giving a synopsis of the results of his measures as inserted in the *Greenwich Observations*, remarks, that he attaches no great weight to the measures of the breadth of the black division, on account of the extreme difficulty and uncertainty of the contacts of the point of reference with its borders. In fact, the aperture of the object-glass being only $6\frac{3}{4}$ inches, and only half of the light of the planet being employed for the formation of each image, all the measures were very difficult from the uncertainty of determining the exact contact of the assumed point of reference, namely, the extreme edge of the exterior bright ring, with the borders of the inner ring, and of the ball whose

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